

**This listing of claims will replace all prior versions, and listings of claims, in the application.**

**Claim Listing:**

1. (Canceled)
2. (Previously Presented) The method of claim 17, wherein the step of assigning a covariance matrix includes the steps of:
  - calculating a variance for each of the instruments in the universe; and
  - assigning a correlation value between a plurality of pairs of the instruments in the universe.
3. (Previously Presented) The method of claim 2, wherein some of the instruments in the universe are associated with an entity and wherein the step of assigning a correlation value further comprises the step of:
  - assigning a correlation value between each of the some of the instruments associated with the entity.
4. (Previously Presented) The method of claim 3, wherein the correlation value between each of the some of the instruments associated with the entity is identical.
5. (Previously Presented) The method of claim 2, wherein some of the instruments in the universe are within a sector in a country and wherein the step of assigning a correlation value further comprises the step of:
  - assigning a correlation value between each of the some of the instruments within the sector in the country.

6. (Previously Presented) The method of claim 5, wherein the correlation value between each of the some of the instruments within the sector in the country is identical.

7. (Previously Presented) The method of claim 2, wherein some of the instruments in the universe are within a first sector and some of the instruments in the universe are within a second sector and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector.

8. (Previously Presented) The method of claim 7, wherein the correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector is identical.

9. (Previously Presented) The method of claim 2, wherein some of the instruments in the universe are associated with a first country and some of the instruments in the universe are associated with a second country and wherein the step of assigning a correlation value further comprises the step of:

assigning a correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country.

10. (Previously Presented) The method of claim 9, wherein the correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country is identical.

11. (Previously Presented) The method of claim 2, wherein some of the instruments in the universe are associated with an entity, some of the instruments in the universe are within a first

sector in a first country, some of the instruments in the universe are within a second sector in a second country, some of the instruments in the universe are associated with a first country and some of the instruments in the universe are associated with a second country and wherein the step of assigning a correlation value further comprises the steps of:

assigning a correlation value between each of the some of the instruments associated with the entity;

assigning a correlation value between each of the some of the instruments within the first sector in the first country;

assigning a correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector; and

assigning a correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country.

12. (Previously Presented) The method of claim 11, wherein the correlation value between each of the some of the instruments associated with the entity is identical, the correlation value between each of the some of the instruments within the first sector is identical, the correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector is identical and the correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country is identical.

13. (Previously Presented) The method of claim 17, wherein the step of calculating a residual variance of the instruments remaining in the universe includes the step of:

calculating 
$$RESVAR^m(R) = \sum_{i \notin K} (\sigma_i^m)^2 + \sum_{i \notin K} \sum_{j \neq i, j \notin K} \sigma_i^m \sigma_j^m \rho_{i,j}$$

where  $i$  and  $j$  are instruments of the universe;

where  $K = \{k_1, k_2, \dots, k_m\}$  is the set of instruments that have been removed from the original universe (and added to the index);

where 
$$\sigma_i^m = \sigma_i^0 \sqrt{(1 - \rho_{i,k_1}^2)(1 - \rho_{i,k_2}^2) \dots (1 - \rho_{i,k_m}^2)}, \quad i \notin K = \{k_1, k_2, \dots, k_m\},$$

where  $(\sigma_i^m)^2$  is the residual variance of the  $i$ th instrument after  $m$  instruments have been removed from the original universe;

where  $\sigma_i^0 = w_i d_i \sigma_{Y,i}$  is the standard deviation of the  $i$ th instrument's total return;

where  $w_i$  is the market value percent (i.e. weight) of the  $i$ th instrument;

where  $d_i$  is the modified duration of the  $i$ th instrument;

where  $\sigma_{Y,i}$  is the yield volatility of the  $i$ th instrument; and

where  $\rho_{i,j}$  is the correlation coefficient between the  $i$ th and the  $j$ th instruments.

14. (Previously Presented) The method of claim 17, wherein the index is formed when the remaining dv01 of the universe is a predetermined percentage of the original dv01 of the universe and a predetermined number of instruments in the universe are inserted into the index.

15. (Previously Presented) The method of claim 17, wherein the index is formed when the remaining dv01 of the universe is a predetermined percentage of the original dv01 of the

universe and a predetermined percentage of the instruments in the universe are inserted into the index.

16. (Previously Presented) The method of claim 15, wherein the predetermined percentage is a percentage of the universe of N instruments on a weighted basis.

17. (Currently Amended) A computer-implemented method for forming an index, the index including a subset of instruments selected from a universe of N instruments, the method comprising the steps of:

a) assigning a covariance matrix to the universe, said covariance matrix comprising a variance for each of the instruments and a correlation matrix;

b) calculating an original dv01 of the universe;

c) after calculating the original dv01 of the universe, removing one of the instruments from the universe;

d) calculating a residual variance for each of the instruments remaining in the universe;

e) calculating a residual variance for the universe based on the residual variance for each of the instruments and the correlation matrix;

f) reinstating the instrument into the universe;

g) repeating steps [[b-e]] c-f for each instrument in the universe;

h) inserting into the index the one of the instruments for which the residual variance of the universe is minimized and

calculating a remaining dv01 of the universe;

i) eliminating from the universe the one of the instruments for which the residual variance of the universe is minimized; and

j) repeating steps c-i until the index is formed,

wherein said index is formed when the remaining dv01 of the universe is a predetermined percentage of the original dv01 of the universe,

and wherein at least one of the steps is implemented with a computer.

18. (Previously Presented) The method of claim 17, wherein the instruments are fixed income instruments.

19. (Previously Presented) The method of claim 17, wherein the instruments are equities.

20. (Previously Presented) The method of claim 17, wherein the instruments are FX securities.

21. (Canceled)

22. (Previously Presented) The computer executable program of claim 37, wherein the program code additionally causes the computer to:

calculate a variance for each of the instruments in the universe; and

assign a correlation value between a plurality of pairs of the instruments in the universe.

23. (Previously Presented) The computer executable program of claim 22, wherein some of the instruments in the universe are associated with an entity and wherein the program code additionally causes the computer to:

assign a correlation value between each of the some of the instruments associated with the entity.

24. (Previously Presented) The computer executable program of claim 23, wherein the correlation value between each of the some of the instruments associated with the entity is identical.

25. (Previously Presented) The computer executable program of claim 22, wherein some of the instruments in the universe are within a sector in a country and wherein the program code additionally causes the computer to:

assign a correlation value between each of the some of the instruments within the sector in the country.

26. (Previously Presented) The computer executable program of claim 25, wherein the correlation value between each of the some of the instruments within the sector in the country is identical.

27. (Previously Presented) The computer executable program of claim 22, wherein some of the instruments in the universe are within a first sector and some of the instruments in the universe are within a second sector and wherein the program code additionally causes the computer to:

assign a correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector.

28. (Previously Presented) The computer executable program of claim 27, wherein the correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector is identical.

29. (Previously Presented) The computer executable program of claim 22, wherein some of the instruments in the universe are associated with a first country and some of the instruments in the universe are associated with a second country and wherein the program code additionally causes the computer to:

assign a correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country.

30. (Previously Presented) The computer executable program of claim 29, wherein the correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country is identical.

31. (Previously Presented) The computer executable program of claim 22, wherein some of the instruments in the universe are associated with an entity, some of the instruments in the universe are within a first sector in a first country, some of the instruments in the universe are within a second sector in a second country, some of the instruments in the universe are associated with a first country and some of the instruments in the universe are associated with a second country and wherein the program code additionally causes the computer to:

assign a correlation value between each of the some of the instruments associated with the entity;



assign a correlation value between each of the some of the instruments within the first sector in the first country;

assign a correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector; and

assign a correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country.

32. (Previously Presented) The computer executable program of claim 31, wherein the correlation value between each of the some of the instruments associated with the entity is identical, the correlation value between each of the some of the instruments within the first sector is identical, the correlation value between each of the some of the instruments within the first sector and each of the some of the instruments within the second sector is identical and the correlation value between each of the some of the instruments associated with the first country and each of the some of the instruments associated with the second country is identical.

33. (Previously Presented) The computer executable program of claim 37, wherein the instructions for causing the computer to calculate a residual variance of each of the instruments remaining in the universe include:

calculating 
$$RESVAR^m(R) = \sum_{i \notin K} (\sigma_i^m)^2 + \sum_{i \in K} \sum_{j \neq i, j \notin K} \sigma_i^m \sigma_j^m \rho_{i,j}$$

where  $i$  and  $j$  are instruments of the universe;

where  $K = \{k_1, k_2, \dots, k_m\}$  is the set of instruments that have been removed from the original universe (and added to the index);

where 
$$\sigma_i^m = \sigma_i^0 \sqrt{(1 - \rho_{i,k_1}^2)(1 - \rho_{i,k_2}^2) \dots (1 - \rho_{i,k_m}^2)}, \quad i \notin K = \{k_1, k_2, \dots, k_m\},$$

where  $(\sigma_i^m)^2$  is the residual variance of the  $i$ th instrument after  $m$  instruments have been removed from the original universe;

where  $\sigma_i^0 = w_i d_i \sigma_{Y,i}$  is the standard deviation of the  $i$ th instrument's total return;

where  $w_i$  is the market value percent (i.e. weight) of the  $i$ th instrument;

where  $d_i$  is the modified duration of the  $i$ th instrument;

where  $\sigma_{Y,i}$  is the yield volatility of the  $i$ th instrument; and

where  $\rho_{i,j}$  is the correlation coefficient between the  $i$ th and the  $j$ th instruments.

34. (Previously Presented) The computer executable program of claim 37, wherein the index is formed when the remaining dv01 of the universe is a predetermined percentage of the original dv01 of the universe and a predetermined number of instruments in the universe are inserted into the index.

35. (Previously Presented) The computer executable program of claim 37, wherein the index is formed when the remaining dv01 of the universe is a predetermined percentage of the original

dv01 of the universe and a predetermined percentage of the instruments in the universe are inserted into the index.

36. (Previously Presented) The computer executable program of claim 35, wherein the predetermined percentage is a percentage of the universe of N instruments on a weighted basis.

37. (Currently amended) Computer executable program code residing on a computer-readable medium, the program code comprising instructions for causing the computer to:

form an index, the index including a subset of instruments selected from a universe of N instruments, the instructions for causing the computer to form an index comprising instructions for causing a computer to:

a) assign a covariance matrix to the universe, said covariance matrix comprising a variance for each of the instruments and a correlation matrix;

b) calculate an original dv01 of the universe before one of the instruments is removed from the universe;

c) remove one of the instruments from the universe;

d) calculate a residual variance for each of the instruments remaining in the universe;

e) calculate a residual variance for the universe based on the residual variance for each of the instruments and the correlation matrix;

f) reinstate the instrument into the universe;

g) repeat steps [[b-e]] c-f for each instrument in the universe;

h) insert into the index the one of the instruments for which the residual variance of the universe is minimized and calculate a remaining dv01 of the universe after said one of the instruments is inserted into the index;

i) eliminate from the universe the one of the instruments for which the residual variance of the universe is minimized; and

j) Repeat steps c-i until the index is formed,

wherein the index is formed when the remaining dv01 of the universe is a predetermined percentage of the original dv01 of the universe.

38. (Previously Presented) The computer executable program of claim 37, wherein the instruments are fixed income instruments.

39. (Previously Presented) The computer executable program of claim 37, wherein the instruments are equities.

40. (Previously Presented) The computer executable program of claim 37, wherein the instruments are FX securities.